

# SECRET

<120> METHODS AND MICROORGANISMS FOR PRODUCTION OF  
PANTO-COMPOUNDS

<130> BGI-141CP

<140> USSN 09/667,569

<141> 2000-09-21

<150> USSN 09/400,494

<151> 1999-09-21

<150> USSN 60/210,072

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<150> USSN 60/227,860

<151> 2000-08-24

<160> 94

&lt;170&gt; PatentIn Ver. 2.0

<210> 1

 $\langle 211 \rangle$  311

&lt;212&gt; PRT

<213> Haemophilus influenzae

<400> 1

Met Glu Phe Ser Thr Gln Gln Thr Pro Phe Leu Ser Phe Asn Arg Glu  
1 5 10 15

Gln Trp Ala Glu Leu Arg Lys Ser Val Pro Leu Lys Leu Thr Glu Gln  
20 25 30

Asp Leu Lys Pro Leu Leu Gly Phe Asn Glu Asp Leu Ser Leu Asp Glu  
35 40 45

Val Ser Thr Ile Tyr Leu Pro Leu Thr Arg Leu Ile Asn Tyr Tyr Ile  
50 55 60

Asp Glu Asn Leu His Arg Gln Thr Val Leu His Arg Phe Leu Gly Arg  
65 70 75 80

Asn Asn Ala Lys Thr Pro Tyr Ile Ile Ser Ile Ala Gly Ser Val Ala  
85 90 95

Val Gly Lys Ser Thr Ser Ala Arg Ile Leu Gln Ser Leu Leu Ser His  
100 105 110

Trp Pro Thr Glu Arg Lys Val Asp Leu Ile Thr Thr Asp Gly Phe Leu  
115 120 125

Gly Thr Asn Gly Gln Arg Ile Pro Tyr Ile Ile Ser Ile Ala Gly Ser  
85 90 95

Val Ala Val Gly Lys Ser Thr Thr Ala Arg Val Leu Gln Ala Leu Leu  
 100 105 110  
 Ser Arg Trp Pro Glu His Arg Arg Val Glu Leu Ile Thr Thr Asp Gly  
 115 120 125  
 Phe Leu His Pro Asn Gln Val Leu Lys Glu Arg Gly Leu Met Lys Lys  
 130 135 140  
 Lys Gly Phe Pro Glu Ser Tyr Asp Met His Arg Leu Val Lys Phe Val  
 145 150 155 160  
 Ser Asp Leu Lys Ser Gly Val Pro Asn Val Thr Ala Pro Val Tyr Ser  
 165 170 175  
 His Leu Ile Tyr Asp Val Ile Pro Asp Gly Asp Lys Thr Val Val Gln  
 180 185 190  
 Pro Asp Ile Leu Ile Leu Glu Gly Leu Asn Val Leu Gln Ser Gly Met  
 195 200 205  
 Asp Tyr Pro His Asp Pro His His Val Phe Val Ser Asp Phe Val Asp  
 210 215 220  
 Phe Ser Ile Tyr Val Asp Ala Pro Glu Asp Leu Leu Gln Thr Trp Tyr  
 225 230 235 240  
 Ile Asn Arg Phe Leu Lys Phe Arg Glu Gly Ala Phe Thr Asp Pro Asp  
 245 250 255  
 Ser Tyr Phe His Asn Tyr Ala Lys Leu Thr Lys Glu Glu Ala Ile Lys  
 260 265 270  
 Thr Ala Met Thr Leu Trp Lys Glu Ile Asn Trp Leu Asn Leu Lys Gln  
 275 280 285  
 Asn Ile Leu Pro Thr Arg Glu Arg Ala Ser Leu Ile Leu Thr Lys Ser  
 290 295 300  
 Ala Asn His Ala Val Glu Glu Val Arg Leu Arg Lys  
 305 310 315

&lt;210&gt; 3

&lt;211&gt; 319

&lt;212&gt; PRT

&lt;213&gt; Bacillus subtilis

&lt;400&gt; 3

Met Lys Asn Lys Glu Leu Asn Leu His Thr Leu Tyr Thr Gln His Asn  
 1 5 10 15

Arg Glu Ser Trp Ser Gly Phe Gly Gly His Leu Ser Ile Ala Val Ser  
 20 25 30

Glu Glu Glu Ala Lys Ala Val Glu Gly Leu Asn Asp Tyr Leu Ser Val  
 35 40 45

Glu Glu Val Glu Thr Ile Tyr Ile Pro Leu Val Arg Leu Leu His Leu  
 50 55 60

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